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Interest of neuromotor assessment in early screening of children at high risk for cerebral palsy within a specialized network

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Objective To identify clinical and laboratory signs of early screening of cerebral palsy in order to propose an early management of children.

Methods Prospective study including 100 newborns with risk factors for CP (relying on gestational age, birth weight, perinatal and neonatal brain injuries). The screening was conducted during a medical consultation by a specialist and was based on clinical setting (neurological examination and neuromotor assessment) and radiological examination (cranial ultrasound, magnetic resonance imaging). The clinical assessment was performed at the 1st, 4th, 9th, 12th, 18th, 24th months and at 5 years after selection of patients.

Results The different clinical factors were weak predictors of becoming during the first month of life. At 4 months, the factors correlated with the evolution to cerebral palsy were: the decrease of lower limbs' spontaneous movements and the lower limb fixed in extension at suspension maneuvers ($P < 0.001$), Babinski sign ($P < 0.001$), as well as absence of an ulnar-palmar grip ($P < 0.01$). At 9 months, we found more predictive signs of the evolution to CP, particularly the head holding problems ($P < 0.001$), the absence of acquisition of sitting position ($P < 0.001$), the absence of precision grip ($P < 0.001$), the deficit of uprising the lower limbs, of hip abduction, of extension of the knee in the lateral inclinations and drawn-seated ($P < 0.001$), hyperreflexia ($P = 0.004$) and the Babinski sign ($P < 0.001$). At 12, 15 and 18 months, neurological examination showed a peripheral hypertonia in 62% of children. At 24 months, peripheral hypertonia is found only in 43% of cases. 38% of children had an adequate level of psychomotor development and a normal neurological examination hence the diagnosis of transient motor abnormalities (TMA) was retained. For imaging, normal cranial ultrasound was significantly more associated with TMA than CP ($P < 0.001$).

Discussion Neurological examination focusing on reflexes and muscle tone is poorly predictive in the first months of life. Neuromotor assessment with the study of spontaneous movements may reflect functional limitations in the first months of life and have been shown to predict later CP. However, the distinction between CP and TMA remains difficult and requires a long follow-up.

Keywords Cerebral palsy; Neuromotor assessment; Early screening; Spontaneous movement

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

Further reading

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CO46-003-e

Interest of early management of children with cerebral palsy within a specialized network

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Objective To show the superiority of early specialized management of children with cerebral palsy (CP) in specific structures.

Materials and methods This was a prospective study including 100 newborns with risk of PC recognized on clinical and radiological criteria and followed since the age of 4 months. They were divided into 2 groups according to the type of management and the place of habitat: G1 included children who received a specialized management since an early age in specialized centers and G2 included children with an external and irregular management. All these children have been regularly assessed, especially at 2 years old.

Results The diagnosis of PC was retained in 62 children who were divided into 30 children in G1 and 32 children in the G2. These two groups were comparable according to the different risk factors: the gestational age, follow-up and complications of pregnancy, circumstances of birth, postnatal complications and clinical assessment at output of service. Evaluation at 2 years old showed that the number of walking children in G1 was more important